

1 Introduction*

Kenyan industry is in a pitiful state. The textile and garment industries are typical. Production has declined and, with it, employment. New investment is minimal, so firms are producing inefficiently using outdated equipment. Many medium- and large-scale firms have closed and those still producing say they are barely breaking even. Small-scale producers are there – over 6,000 of them in Nairobi alone – but it is not clear how profitable they are. The questions constantly before us are: ‘Why should this be so?’ and ‘What can be done to improve the situation?’

This special issue of the *IDS Bulletin* is focusing on the contribution of value-chain analysis to our understanding of the organisation of industry worldwide. The value-chain approach is useful because it explicitly recognises the ever-increasing globalisation of production. It also allows analysis of the full range of industry actors and the linkages between and among them. In so doing, it generates important and useful information. Nevertheless, value-chain analysis alone can rarely answer the ‘why’ questions raised above. This is because many of the problems of particular industries and industry in general have their roots in deeply entrenched ways of doing things. These ‘rules of the game’ of business, when taken together, form the business system of a particular country or region, and often determine what kind of industry is undertaken there, how it is organised, and what constraints it faces. To understand industry, one must know the business system.

The purpose of this article is twofold: to develop a simplified model that takes both the value chain and the business system into account, and to apply the model to a small sample of Kenyan garment producers and their textile suppliers. The article is written in six parts. Parts 2 and 3 briefly discuss the concepts of value chains and business systems. Part 4 draws the two together into a simplified model for analysing value chains. Part 5 shows how the model can be applied to a particular case, in this instance the garment industry in Kenya. Finally, part 6 draws some conclusions about both the usefulness of the model and what it has revealed about Kenya’s garment industry.

Value Chains and the Business System

Applying a Simplified Model to Kenya’s Garment Industry

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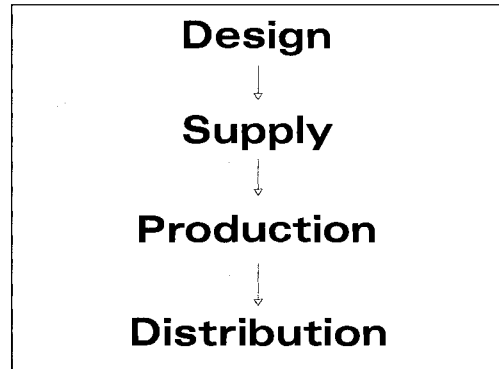
2 Value Chains and Production Networks

The usefulness of value-chain analysis has been demonstrated in studies of industries as varied as fresh fruits and vegetables, garments, and automobiles (Dolan and Humphrey 2000; Gereffi and Korzeniewicz 1994; Gibbon 2000; Gereffi 1999; Gibbon 2000; Humphrey 1999; Kaplan and Kaplinsky 1998; Schmitz and Knorringa 1999). The concept of the global value chain recognises that the design, production and marketing of many products now involve a chain of activities divided among enterprises located in different places. The value chain describes the activities required to bring a product from its conception to the final consumer. The chain includes all of a product's stages of development, from its design to its sourced raw materials and intermediate inputs, its marketing, its distribution, and its support to the final consumer.

This fairly simple concept has several dimensions. The first is its flow, also called its *input-output structure*. In this sense, a chain is a set of products and services linked together in a sequence of value-adding economic activities. At its simplest, we can think of a chain as having four main sections. A product is first designed, then raw materials are purchased and production takes place; the product is then distributed through wholesalers and retailers. At each stage, services such as transport or finance may be needed to keep the process going. As we will see when we start mapping real chains, some of these sections may be subdivided and others combined or compressed. Nevertheless, the four sections – design, inputs, production, distribution – remain a handy device for understanding each step of the process.

A value chain has a less visible input-output structure. This is made up of the flow of knowledge and expertise necessary for the physical input-output structure to function. The flow of knowledge generally parallels the material flows, but its intensity may differ. For example, the knowledge inputs at a product's design stage may be much greater than the material inputs; production, on the other hand, needs large quantities of materials, but in many cases requires only standard or routine knowledge.

Figure 1



The second dimension of a value chain has to do with its *geographic spread*. Some chains are truly global, with activities taking place in many countries on different continents. Others are more limited, involving only a few locations in different parts of the world. A UK retailer may, for example, contract with a Chinese fabric supplier to deliver cloth to a garment producer in Sri Lanka. The finished goods will then be shipped directly to the UK retailer. It is also possible to identify national, regional, or local value chains. These operate in the same way as the global chains, but their geographic 'reach' is more limited.

The third dimension of the value chain is the control that different actors can exert over the activities making up the chain. The actors in a chain directly control their own activities and are directly or indirectly controlled by other actors. A retailer, for example, controls the way he sells, but may be limited (indirectly controlled) by the range of goods available from wholesalers and producers. A homemaker may find that almost every aspect of her work is controlled by a distant retailer who has specified the design, quantity and quality of the garments she is producing. The pattern of direct and indirect control in a value chain is called its *governance*. Since value chains are basically constellations of human interaction, the possible varieties of governance are endless. In the real world, however, we find that many chains are governed by lead firms (Gereffi 1994; Humphrey and Schmitz 2000; Sturgeon 2000). These firms do not merely buy goods in the market. Rather they specify what is to be produced by whom, and they monitor the performance of the producing firms. In some cases,

the lead firms are large producers such as transnational corporations or other large integrated industrial enterprises. The automobile industry is a good example of a producer-driven value chain. The large automobile companies dominate the chain by setting the specifications that must be followed by firms joining their networks of component suppliers. Other chains are driven by the buyers of the products. In clothing and footwear, leading brand-name companies like Liz Claiborne and Nike do no production themselves. Instead, they concentrate on design and marketing. Their strength as buyers enables them to dominate certain value chains. They determine what fabrics will be used, what styles will be produced and in what colours.

A detailed understanding of the actors, linkages, and value-added at each stage of production and distribution seems to be a necessary underpinning for meaningful efforts to upgrade an industry. Such an understanding also raises important questions. Why, for example, does a single activity garner nearly half of the profits, while another gets less than 10 per cent? Why are certain activities dying out or being absorbed by actors above or below them in the value chain? Why have producers failed to penetrate regional or global markets? Some answers will flow from the value-chain analysis itself, but finding others requires a broader perspective.

3 The Business System

Part of that broader perspective appears to lie in the country's business system. Business systems are particular forms of economic organisation that have become established and reproduced in certain institutional contexts (Whitley 1996). Underlying the notion of a business system is the recognition that business activity does not happen in a vacuum. Rather, businesses are formed and operate in a specific environment peopled by a wide variety of institutions. The growing literature on business systems attempts to explain the organisation and functioning of industry using the broad theoretical framework of the New Institutional Economics (NIE). In a sense, the business system approach does for the NIE what older industrial organisation models did for neo-classical economics. It attempts to examine the forces that direct and influence the way individual businesses operate and, ultimately,

the organisation of business activity in general (Pedersen and McCormick 1999).

The issues covered by the Business Systems approach are similar to those discussed under the National Systems of Innovation literature (see, for example, Penrose 1959; Freeman 1988, 1995; Nelson 1993; Edquist 1997). Both approaches recognise that ways of doing things differ across national boundaries, and that the differences are historically rooted and change only slowly.¹ The two differ, however, in focus. Whereas the National Innovation Systems literature takes innovation, especially product innovation, as its focal point; the Business Systems approach examines a broader range of issues.

In theory, the Business Systems approach takes into account the full range of economic, social and political institutions. Research in Asia and Europe, however, suggests that particular groups of institutions are likely to be more important than others in determining the nature of a national business system. Whitley (1992) groups the institutions into three main categories: firms, markets, and societies. Firm-level institutions include management styles and structures, decision-making processes, owner-employee relations, patterns of company growth and development. Markets and market development include customer, supplier and inter-firm relations, the roles of financial sectors and the state in market and industry development. The final group consists of key social institutions such as education systems, systems of power and status, and family structure.

The picture that has emerged from the business systems perspective is of fairly coherent national systems that differ from one another in important respects. Thus, according to Whitley (1992), Japan, Korea, Taiwan and Hong Kong all have recognisable national systems that are the product of their differing histories and institutional environments. Fukayama (1995) makes a similar point regarding the Japanese and Chinese systems: history and institutions, especially the nature of the family, have combined to create distinct patterns of business organisation.

In Africa, history and the institutional environment seem to have combined to produce a different

result: business systems that are not unitary but fragmented (Pedersen and McCormick 1999). The typical African production and distribution system consists of several distinct segments: a parastatal sector; a formal, large-scale private sector typically dominated by multinational affiliates and so-called 'non-indigenous' enterprises owned by migrant traders or settlers such as Asians in East Africa, whites in South Africa and Zimbabwe, and Lebanese in West Africa; and finally a micro and small enterprise (MSE) sector which is mostly African, but often contains an important illegal or semi-legal large-scale component. The various fragments interact with each other, but only in limited ways.

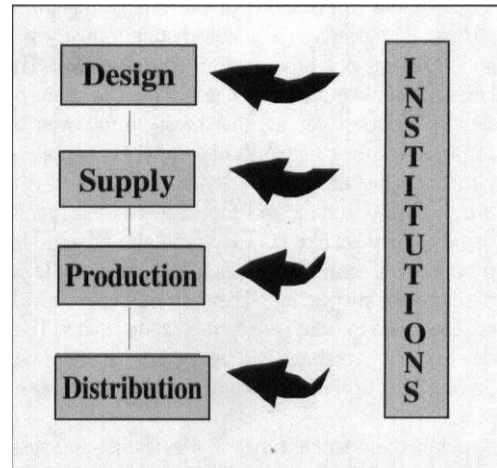
The history of development in Africa also means that in nearly all cases the state remains the most critical institution for facilitating or impeding economic development. Therefore, rather than following Whitley (1992) in treating the state as one of a number of market-related institutions, a specifically African approach will consider the state first and separately, and then go on to look at firm-level institutions, markets and social institutions.

4 Why Do We Need Both?

The 'why?' and 'what can be done?' questions raised above are essentially matters of development and development policy. Answering them entails understanding the process of economic change. Many scholars today argue that economic development depends both on basic economic factors such as factor inputs and productivity, and on institutions. Value-chain analysis is an excellent tool for understanding the economic factors. By providing information on the production network – who interacts with whom, who leads and who follows – it can also highlight key institutional issues. To take the analysis to the point of useful policy recommendations, however, the institutional variables also need to be explored in depth.

Our simplified model attempts to combine the value-chain and business-systems approaches. The model starts with a mapping of the value chain (see Figure 2). The mapping involves identifying the main actors in each of the four chain segments and then giving a visual representation of the connections between these actors. The nature of the

Figure 2



information gathered depends on the question to be addressed. Some studies will require quantitative data in the form of sales and production figures. Others need only the network mapping. Some studies emphasise material flows. In others, knowledge flows are more important.

The mapping leads directly into the second stage of the process: identifying the key institutions affecting the functioning of the chain. In the value chain for a high-tech product, for example, the design stage will be knowledge intensive. This suggests that the education system and other technology-related institutions will be very important to this part of the chain. An education system that emphasises arts subjects rather than maths and science may not produce enough local people capable of designing such products and may be one reason why designs are imported rather than developed at home. On the other hand, the nature of the technology system may be less critical for the production or distribution stages of the value chain.

An important pair of articles attempts to show the complementarity of the business-systems and value-chain approaches (Gereffi 1996; Whitley 1996). One of these concludes by advocating 'studies that would combine the dynamic and international concerns of the GCC approach with the institutional and systemic focus of the business systems framework' (Whitley 1996:422). The model presented above is a step in that direction.

Table 1: Location of dominant actors in garment value chains in Kenya

Stage	Export		Domestic		
	VC1 Shirts, etc.	VC2 Eco friendly	VC3 Uniforms	VC4 Woven shirts	VC5 Knitted shirts
Design	US importer	Kenya/ German buyer	Kenya (buyers)	Kenya (producers)	Kenya (buyers and producers)
Inputs	East or South Asia through US importer	Kenya	Kenya and/or India and E. Asia	East and South Asia	Kenya
Production	Kenya	Kenya	Kenya	Kenya	Kenya
Distribution	US importer	German buyer	Kenya uniform users	Kenya wholesalers and retailers	Kenya retailers and companies

We turn now to the analysis of the Kenyan garment sector. The discussion draws mainly on data collected in a series of interviews with 22 large- and medium-scale firms in various locations in the country. Twelve of these produce garments only, five manufacture textiles only, and four make both (see Appendix). The firms range in size from 5 to 2,000 workers, with a mean size of 398 and a median of 170 workers.² Two of the four largest producers, with more than 1,000 workers each, are export garment factories. The firm-level data were supplemented by interviews with key informants, secondary sources and additional information gleaned from a related study of micro and small firms in Nairobi.

5 Kenya's Garment Sector

5.1 The value chains

The study revealed the existence of a number of separate garment chains with large- or medium-scale production facilities in Kenya. Table 1 provides a rough mapping of five of these chains.³

Three of the producing firms interviewed fall into the first chain (VC1), which consists of exporting firms that are inserted into the global value chain for garments. All three of these producers take advantage of special concessions granted by the Kenya

government to encourage exports. Two are Export Processing Zones (EPZ) producers and the third is Manufacturing Under Bond (MUB).⁴ These firms mostly make shirts, shorts, trousers and, occasionally, simple cotton dresses. They tend to be large, with between 500 and 2,000 workers each, but production is the only function carried out in Kenya. One of them described his firm as 'glorified tailors'. They neither do design work nor supply procurement. Designs come from the US importer; the local firm then makes and grades the patterns. The importer also sources fabric and most other inputs from Asia and has them shipped directly to the Kenyan producer. The main items bought in Kenya are packaging materials, though one firm was trying to work with a local supplier to upgrade the quality of thread to a level acceptable to the US buyers.

VC2 is a specialised chain that at present has only two participating firms. One is a knitting mill that makes eco-friendly cotton-knit fabric, using cotton that has been organically grown in Kenya, and natural dyes. The other is a medium-scale manufacturer that is subcontracted to make a range of garments for export to Germany. All of the output is sold to a single buyer in Germany, who in turn distributes them through its own network. The subcontractor and the buyer cooperate in making new garment designs.

The remaining value chains (VC3, VC4, and VC5) end in the domestic market. VC3 is the chain for uniforms. Designs are usually provided by the uniform users, though one of the large firms has design capability for those who wish to take advantage of it. Supply procurement depends largely on the type of fabric required. Those making school uniforms, overalls and dustcoats buy locally-made fabric. Those making dress uniforms for hotels, airline staff and the military generally source their materials from other countries, mainly South and East Asia, but also woollen fabric from United Kingdom, nylon from Turkey and embroidery thread from Germany.

VC4 is the domestic chain for men's woven shirts. Producers in this chain do their own designing, though they admit that their product is standard with little variation. They source nearly all of their shirting from East and South Asia. The main exception to this is the fabric for school shirts, which some producers source in Kenya. They distribute through wholesalers and retailers around the country. They indicated that, although there may be some buyers who take their products into neighbouring countries, they were not attempting to export directly.

The fifth chain (VC5) is the domestic knitted-shirt chain. The products include T-shirts, polo shirts, and sweat shirts. Some are plain, others screen printed or embroidered. They are made both in sewing units attached to knitting mills and in separate manufacturing facilities. In some cases the screen printing is done by a different firm. All producers use fabric made in Kenyan knitting mills of cotton grown mainly in Tanzania and/or Uganda. Distribution is either directly to companies ordering the shirts (e.g. as promotional items or prizes for workers) or to wholesalers and retailers.

It is difficult to be precise about the relative importance of these chains because we do not have full information on turnover or value added. VC1 has only about six firms, but these could account for as much as half of total garment output. This chain's greatest contribution at the moment is to employment. Its impact on value added is lower because of its reliance on Asian fabric. VC2 is a very small chain, but three of the four chain functions are located in Kenya. Furthermore, it has

strong backward linkages into high value Kenya-grown organic cotton. The three domestic chains have more producing firms than the export chains, but many are operating at very low levels because of Kenya's current poor economy. The knitted-shirt chain and parts of the uniform chain are fully Kenyan, but these are also suffering from the poor economy and the decline in tourism.

5.2 The impact of institutions

Having done a rough mapping of the chain, we turn now to the impact of institutions on its various functions. We begin with production issues because these are similar across the five chains. We then take up issues affecting supply, distribution, and design.

Garment firms raised two main issues related to production, each with roots in the current institutional framework. Power availability and cost is the first issue. Stringent power rationing between May and December 2000 meant that many firms were forced to run their own generators or to shut down for specified periods. The costs associated with either option were, according to those affected, substantial. Power costs (tariffs) seemed to be an even more important issue because their direct effects on the cost of production make Kenyan goods uncompetitive on both domestic and export markets. One interviewee cited a newspaper article, which placed Kenya second only to Japan in its power cost (US\$0.10 per KWH in Kenya, compared to US\$0.108 per KWH in Japan) and far higher than South Africa (US\$0.028), Kenya's rival to the south (*East African Standard*, 5 September 2000). Analysts of the power sector point to poor planning, poor administration and corruption as key reasons for Kenya's high power costs and current power shortage (Okech and Nyoike 2000).

The second production issue is labour productivity. Kenya is a low-wage country, with 1993 wage costs comparable to those in China and India (ILO 1995). This should make Kenyan garments very competitive on the world market. According to some, however, the wage benefit is seriously undermined by low productivity. One manufacturer claims that garment industry productivity rates in the Far East are ten times those in Kenya, and that Indian productivity is five times Kenya's. We were not able to substantiate those figures, but the productivity problem does seem to be real. In some

cases it is due to outdated equipment, which in turn reflects the country's poor investment climate. Kenya's economic and political instability has discouraged companies from investing in new technology. For example, one producer of knitted garments showed us its three sets of equipment. The first group was mechanical, dating from the 1960s. The second, smaller group, consisted of partially automated machines bought in the 1980s, and the third and smallest group had computerised machines. The general manager said that if Kenya's economy were more stable, he would have replaced all of the oldest group and most of the second group by now. In other cases – especially smaller factories producing for the domestic market – low labour productivity seems to be due to the use of 'full garment' production methods. Some factory owners argued that Kenya's training institutions need to pay more attention to the garment industry; others said that low productivity is a result of a poor work ethic rather than lack of capability. The larger factories have tried to counter the problem by introducing their own training programmes or, in some cases, by hiring expatriate supervisors. The owners of medium-scale factories seem reluctant to invest in the training and renovation of facilities that would be necessary to improve their technology. Basically, they did not see how they could recover such investment when, in their view, neither the domestic nor the regional market is likely to be very profitable in the near future. Some were still thinking about trying the export market, but others were discouraged, feeling that the required investment was beyond their reach.

Of the three value chains using woven fabric (VC1, VC3, and VC4), only the one manufacturing heavy-duty uniforms makes extensive use of Kenyan fabric. The reasons for this, according to our respondents, are the limited availability of Kenyan-made shirting, its relatively high cost, and the greater flexibility of Far Eastern suppliers. At one time Kenya had a flourishing textile industry (Coughlin 1991). Over the past ten years, most of the largest textile mills have closed and production levels have dropped to their 1976 levels (McCormick *et al.* 1999). The remaining firms are producing well below capacity and many have dropped whole product lines. What remains cannot compete with imported fabric. One respondent told us, 'You can get

Kenyan fabric that is as good as what comes in from the Far East, but only at a higher price.' According to sources in the textile industry, lack of up-to-date machinery and the costs of electricity and water are the main culprits in their high cost structure. Cost is not the garment producers' only consideration in choosing their fabric suppliers. One medium-scale manufacturer told us that he prefers to import because he can get greater variety in a single shipment. He can order as little as 500 metres per colour per design from his foreign supplier, but must order at least 2,000 metres of the same colour and design from the Kenyan factory.

Distribution issues differ for domestic and exporting firms. Low demand is a major problem for those producing for the local market. Firms complained of the apparently duty-free entry of a wide variety of imports. The problem of second-hand clothes has been widely discussed. Our respondents agreed that second-hand clothes benefit the poor. They do not advocate banning them, but argued that their importation should be controlled. More damaging, in their view, are the imports of new clothes. Some of these enter the country in the suitcases of small traders who travel to places such as Dubai. In other cases, whole container loads are brought in by or through well-connected individuals. Rejected shipments of items produced for export can also find their way onto the Kenyan market. Duty-free items are then sold at prices below the statutory duty and well below the cost of producing a comparable Kenyan product. The situation is aggravated by the Kenya Bureau of Standards' (KBS) double standards. KBS enforces its labelling requirements, including country of manufacture, on Kenyan goods, but not on imported items.

The distribution problems reported by exporting firms centred on Kenya's poor tele-communications and transport networks. These firms had updated their own technology. Some had websites. All communicated with suppliers and customers by fax and e-mail. They complained bitterly, however, about the erratic and costly service provided by Telkom Kenya. One firm ranked tele-communications as one of his most serious institutional issues. Transport is also a major problem, especially for exporting firms located away from

Mombasa and for domestic firms with national markets.

On the positive side, exporters and potential exporters praised the efforts put in by the Ministry of Tourism, Trade and Industry in developing supporting regulations that have enabled Kenya to be the first African country to be certified to export into the United States under provisions of that country's 'Africa Growth and Opportunity Act' (AGOA). Many see AGOA as a significant opportunity, although they worry that Kenya may not be able to meet the more stringent rules of origin that will take effect in 2004.

None of the firms thought that design was a major issue. The exporting firms are typical of producers in buyer-driven chains in that they rely on their buyers for designs. The shirt manufacturers all said that designs change very little so that their internal design capability was adequate. Nevertheless, there is scope for improvement in design capability. We noted that few African Kenyans occupy the skilled positions of pattern making and pattern grading. This seems to support the contention that training institutions are weak in the practical aspects of garment manufacture.

What respondents did not say is also important. Two points are worth noting. The first is that none of the EPZ or MUB firms mentioned having major problems with the special concessions – duty free imports, tax holidays, etc. – that go with their status. This means that these programmes have been well institutionalised and are working smoothly. The second point concerns the domestic market. Although domestic firms were clearly suffering from the way market liberalisation was being implemented, none wanted to return to a controlled economy.

6 Conclusions

What can we conclude from these findings? The value-chain analysis shows up several potentially important features of the industry. The export value chain (VC1) is currently a major employer, despite the fact that only one of its functions is carried out in Kenya. The analysis identified the second export chain (VC2) and raises the question of its growth potential. The analysis revealed the variety that

exists among the domestic value chains. Although the poor economy has an impact on all of them, the specific problems faced by uniform producers (VC3) differ from those of shirt manufacturers (VC4). The value-chain analysis also allowed us to distinguish issues affecting each of the four chain stages. Finally, it highlighted the dominance of the production stage, the relative weakness of supply, and the total absence of both design and supply in the growing export chain (VC1).

Value-chain analysis might also have told us something about the industry's potential for upgrading. For example, it might have assessed the possibilities for improving production processes, differentiating products, or creating brand names. We do not yet have sufficient data to make such judgments in the Kenyan case, but the tools needed are present in the analytical model. This is especially important for developing economies like Kenya, since upgrading may ultimately be the only way to avoid the constant squeeze of competition based on low prices.

The business-system perspective has supplemented and complemented the value-chain analysis. It has enabled us to look behind some of the findings to answer the 'why?' questions. Not surprisingly, given its continued dominance of the economy, the state is held responsible for many of the difficulties being experienced by the industry. The state controls both the power and water sectors, where shortages and high tariffs are a major source of productive inefficiency. The state, as the major shareholder in Telkom Kenya, is blamed for the deteriorating telecommunications system. The state is also blamed for an ill-conceived market liberalisation process. For this industry, the worst effect of liberalisation has been the flooding of the market with cheap imports. The institutional cause of this is the failure of the customs section of the Kenya Revenue Authority to collect statutory duties on new textiles and clothing. The double standards of the Kenya Bureau of Standards are not as serious, but are certainly aggravating to some producers. Finally, the state and the political process are implicated in the general instability that makes investment in Kenya unattractive.

Other elements of the business system that appear to have important effects on this industry are the

technology system, the labour system, and firm-level institutions in the textile industry. High-level technology is available in Kenya, but, as already discussed, many firms have opted not to invest in it. The technological weakness identified by the analysis is not at these high levels. It lies mainly in the failure of the education system and training institutions to provide support for the garment industry's standard technology. It is well known that Kenya's education system is extremely weak in mathematics at all levels. This means that Kenyan workers may have difficulty with tasks like pattern making and grading that require mathematical precision. Training institutions such as the national polytechnics or the Textile Training Institute could help in filling this gap by offering specialised courses in garment production, but so far have not done so. Problems with the labour system were raised most strongly by the export-oriented firms, no doubt because they are under great pressure to meet international productivity standards. Our study has paid limited attention to firm-level institutions. One that emerged from discussions with domestic producers was the minimum purchase rule used by some local textile mills. While the rule may be somewhat understandable, given Kenya's small textile market and the set-up costs associated with producing small quantities of a particular design, it is also self-defeating because it encourages potential customers to source from the more flexible foreign suppliers.

This analysis was able to identify a number of important issues. In some cases, the information gathered is enough to form the basis for recommendations for changes in policies or for improved policy implementation. Most importantly, the government needs to pay more than lip service to its support for rapid industrialisation. The kind of energy demonstrated by the Ministry of Tourism, Trade and Industry in its work on AGOA needs to be replicated in building a supportive framework for industry at all levels, from infrastructure to appropriate tax incentives. The government also needs to enforce existing regulations in a fair and transparent manner. One clear example is the enforcement of customs regulations. This is critical, or what remains of a domestic garment industry will die. In others cases, such as the training curriculum and firm-level institutions, more detailed studies are needed before practical recommendations can be

developed. This analysis has laid the groundwork for such studies and it is now up to government, industry, and/or the research community to see that they are undertaken.

The emphasis in this article has been on methodology. It has developed and applied a simple model that combines value-chain analysis with examination of the institutions making up the business system. Kenya's garment industry provided the data on which to test the model. Limitations of space and the fact that the study is not yet complete mean that the empirical parts of the article are necessarily sketchy. Nevertheless, the data have been sufficient to show that the model offers a useful framework for understanding Kenya's garment industry. Further testing and refinement in other sectors and other settings could, we believe, make it more widely applicable.

Notes

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1. See Lundvall (1998) for a detailed comparison of the Business Systems and National Systems of Innovation approaches.
2. Although we attempted to cover firms of different sizes and types, we did not use any random method. As a result, these statistics are not necessarily typical of the industry as a whole.
3. Other chains, such as those for women's wear, children's clothing and African dress also exist. The five presented here are meant to be illustrative rather than exhaustive.
4. Both EPZ and MUB firms are allowed duty-free import of inputs and tax-free local purchases provided that all output is exported. In addition, EPZ producers are granted a ten-year tax holiday, followed by another ten years at 25 per cent tax.

Appendix: Textile and garment firms interviewed

Firm	Industry	Main products	Market(s)	Export status	Employment
A	Garment	CMT garments (shirts, etc.)	Export (USA)	MUB	500
B	Textile	Towels, baby nappies	National	none	400
C	Garment	Socks, hosiery	National	none	90
D	Garment	CMT garments (shirts, etc.)	Export (USA)	EPZ	1,000
E	Garment	Trousers, safari suits	National	none	80
F	Garment	Men's and women's clothing	Local	none	5
G	Garment	Shirts	National	none	80
H	Textile	Polyester fibre	National	none	130
I	Garment	T-shirts, African dress	Tourist and export	none	20
J	Garment	Uniforms	National	none	140
K	Textile, Garment	Yarn, thread, knitted and woven cloth, knitted shirts	National and export (Canada and Europe)	none	1,500
L	Textile, Garment	Knitted and woven cloth, sweaters	National and export (Europe, region)	none	500
M	Garment	Knitted and woven garments	National and export (Germany)	none	60
N	Garment	Work uniforms	National	none	12
O	Garment	CMT garments (shirts, etc.)	Export	EPZ	2,000
P	Textile	Woven fabric	National and regional	none	500
Q	Garment	Shirts	National	none	100
R	Textile, Garment	Woven fabric, CMT garments	National and export (Europe)	MUB	550
S	Textile	Blankets	National and regional	none	200
T	Textile	Polyester yarn	National and regional	none	80
U	Textile	Sheets	National	none	10
V	Textile	Knitting yarn, baby shawls, sweaters, suiting material	National	none	1000

Notes: MUB: Manufacturing Under Bond; EPZ: Export Processing Zone

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